TiBS

trends in BIOCHEMICAL SCIENCES

is an official publication of the INTERNATIONAL UNION OF BIOCHEMISTRY AND MOLECULAR BIOLOGY

Author Index

Subject Index

Index of Books Reviewed

1999

Volume 24
Issues 1–12

ISSN 0968 0004

ELSEVIER
SCIENCE
LONDON

Trends in Biomedical Sciences

Elsevier Science London,
84 Theobald's Road,
London, UK WC1X 8RR
Tel: +44 (0)20 7611 4400
Fax: +44 (0)20 7611 4401
Email: tibs@current-trends.com

Advisory Editorial Board

Tim Hunt (editor-in-chief), *Herts, UK*
Joanne Chory, *La Jolla, USA*
Jack Dixon, *University of Michigan, USA*
Alan R. Fersht, *Cambridge, UK*
Toby Gibson, *Heidelberg, Germany*
Carol Greider, *Baltimore, USA*
Carl-Henrik Heldin, *Uppsala, Sweden*
Matthias Hentze, *Heidelberg, Germany*
Roger Kornberg, *Stanford, USA*
Angus Lamond, *Dundee, UK*
Thomas Pollard, *La Jolla, USA*
Paul Schimmel, *La Jolla, USA*
Peter H. von Hippel, *Eugene, USA*
Graham Warren, *London, UK*
Jan Witkowski, *New York, USA*
Mitsuhiro Yanagida, *Kyoto, Japan*

Editors Mary Purton, Emma K. Wilson

Acting Editor Anna Sharman

Editorial Assistants Richard Sever, Arianne Heinrichs

Editorial Administrators Christine Oliver, Gaynor Parke, Matthew Cook

Publishing Manager Rob Brines

© 2000 Elsevier Science Ltd.

This journal and the individual contributions contained in it are protected by the copyright of Elsevier Science Ltd. Except as outlined in the terms and conditions, no part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of the publisher, Elsevier Science London, 84 Theobald's Road, London, UK WC1X 8RR.

AUTHOR INDEX

Abbreviations: BR, Book Review; L, Letter to the Editor; O, Obituary; R, Reflections; M page numbers refer to the December Millennium issue.

A

Abergel, C., Chavrier, P. and Claverie, J-M., Author correction: Triple association of CDC25-, Dbl- and Sec7-related domains in mammalian guanine-nucleotide-exchange factors 178
Aebersold, R., *see* Watts, J. D. (L) 228
Alberts, B., Are our universities producing too many PhDs? M73
Aleshin, V. V., Zakataeva, N. P. and Livshits, V. A., A new family of amino-acid-efflux proteins 133
Amos, B., Green Fluorescent Protein: Properties, Applications and Protocols (BR) 251
Aravind, L. and Koonin, E. V., G-Patch: a new conserved domain in eukaryotic RNA-processing proteins and type D retroviral polyproteins 342
Aravind, L., *see* Ponting, C. P. (L) 177
Aravind, L., *see* Ponting, C. P. 130
Aravind, L., Computational Methods in Molecular Biology (New Comprehensive Biochemistry Vol. 32) (BR) 463
Aravind, L., Dixit, V. M. and Koonin, E. V., The domains of death: evolution of the apoptosis machinery 47
Atkinson, T., Bacteria and Antibacterial Agents (BR) 39
Azzone, G. F. and Lee, C-P., Lars Ernster (1920–1998) (O) 166

B

Baldauf, S., Five Kingdoms: An Illustrated Guide to the Phyla of Life on Earth (3rd edn) (BR) 325
Baldwin, R. L. and Rose, G. D., Is protein folding hierarchic? I. Local structure and peptide folding 26
Baldwin, R. L. and Rose, G. D., Is protein folding hierarchic? II. Folding intermediates and transition states 77 (*see also* erratum 185)
Baraldi, E., *see* Blomberg, N. 441
Barber, J., Nield, J., Morris, E. P. and Hankamer, B., Subunit positioning in photosystem II revisited 43
Bartel, D. P. and Unrau, P. J., Constructing an RNA world 9
Bateman, A., The SIS domain: a phosphosugar-binding domain 94
Bedford, M. T. and Leder, P., The FF domain: a novel motif that often accompanies WW domains 264
Beernink, H. T. H. and Morrical, S. W., RMPs: recombination/replication mediator proteins 385 (*see also* erratum 436)
Benzer, S., *see* Schwarz, E. (L) 260
Blencowe, B. J. and Ouzounis, C. A., The PWI motif: a new protein domain in splicing factors 179
Blomberg, N., Baraldi, E., Nilges, M. and Saraste, M., The PH superfold: structural scaffold for multiple functions 441
Bokoch, G. M., *see* Daniels, R. H. 350
Borisy, G. G., *see* Svitkina, T. M. 432
Bork, P., *see* Morett, E. 229
Bork, P., *see* Ponting, C. P. (L) 177
Bork, P., Doerks, T., Springer, T. A. and Snel, B., Domains in plexins: links to integrins and transcription factors 261
Bourne, P. E., *see* Quinn, G. B. 321
Braun, V. and Killmann, H., Bacterial solutions to the iron-supply problem 104
Brehm, A. and Kouzarides, T., Retinoblastoma protein meets chromatin 142
Brown, M. F., *see* Salamon, Z. 213
Brunori, M., Cutruzzola, F., Savino, C., Travaglini-Allocatelli, C., Vallone, B. and Gibson, Q. H., Does picosecond protein dynamics have survival value? 253
Brunori, M., Hemoglobin is an honorary enzyme (R) 158
Buchner, J., Hsp90 & Co. – a holding for folding 136

C

Cahill, D. P., Kinzler, K. W., Vogelstein, B. and Lengauer, C., Genetic instability and darwinian selection in tumours M57
Callebaut, I., *see* Girault, J-A. 54
Carafoli, E. and Krebs, J., Calmodulin and Signal Transduction (BR) 325
Card, G. L., *see* Swanton, C. 116
Carman, G. M., *see* Kent, C. 146
Carrion-Vazquez, M., *see* Fisher, T. E. 379
Cascieri, M. A., Identification and Expression of G Protein-Coupled Receptors (BR) 162
Caskey, C. T., *see* Gerhold, D. 168
Castagnola, M., A reply to Fields (L) 129
Ceska, T. A., Eukaryotic DNA Replication (BR) 410
Chait, B. T., *see* Manning, J. M. 211
Chapman-Smith, A. and Cronan, J. E. Jr, The enzymatic biotinylation of proteins: a post-translational modification of exceptional specificity 359
Chardin, P., *see* Cherfils, J. 306
Chavrier, P., *see* Abergel, C. 178
Chen, W., *see* Manning, J. M. 211
Chen, Z-P., *see* Kemp, B. E. 22
Cherfils, J. and Chardin, P., GEFs: structural basis for their activation of small GTP-binding proteins 306
Choe, S., Kreusch, A. and Pfaffinger, P., Towards the three-dimensional structure of voltage-gated potassium channels 345
Christofori, G. and Semb, H., The role of the cell-adhesion molecule E-cadherin as a tumour-suppressor gene 73
Claverie, J-M., *see* Abergel, C. 178
Colussi, P. A., *see* Kumar, S. 1
Crews, C. M. and Splittgerber, U., Chemical genetics: exploring and controlling cellular processes with chemical probes 317
Cronan, J. E. Jr, *see* Chapman-Smith, A. 359
Crossley, M., *see* Turner, J. 236
Cutruzzola, F., *see* Brunori, M. 253

D

D'Agostino, I. B. and Kieber, J. J., Phosphorelay signal transduction: the emerging family of plant response regulators 452
Dalbey, R. E. and Robinson, C., Protein translocation into and across the bacterial plasma membrane and the plant thylakoid membrane 17
Dang, C. V. and Semenza, G. L, Oncogenic alterations of metabolism 68
Daniels, R. H. and Bokoch, G. M., p21-Activated protein kinase: a critical component of morphological signaling? 350
Dantonel, J-C., Wurtz, J-M., Poch, O., Moras, D. and Tora, L., The TBP-like factor: an alternative transcription factor in Metazoa? 335
Davies, J., Millennium bugs M2
Davis, G. K. and Patel, N. H., The origin and evolution of segmentation M68
De Cesare, D., Fimia, G. M. and Sassone-Corsi, P., Signaling routes to CREM and CREB: plasticity in transcriptional activation 281
de Chadarevian, S., Protein sequencing and the making of molecular genetics (R) 203
de la Cruz, J., Kressler, D. and Linder, P., Unwinding RNA in *Saccharomyces cerevisiae*: DEAD-box proteins and related families 192
De Vries, L., *see* Siderovski, D. P. 340
De Vries, L., *see* Zheng, B. 411
Dever, T., Translation initiation: adept at adapting 398

Diemand, A., *see* Guex, N. 364
Diversé-Pierluissi, M. A., *see* Siderovski, D.P. 340
Dixit, V. M., *see* Aravind, L. 47
Dixit, V. M., *see* Hofmann, K. (L) 227
Dobson, C. M., Protein misfolding, evolution and disease 329
Doerks, T., *see* Bork, P. 261
Doolittle, W. F., Lateral genomics M5
Drennan, C. L., Alternative Careers in Science: Leaving the Ivory Tower (BR) 41
Driscoll, M., *see* Tavernarakis, N. 425
Dufton, M., Amino Acids and Peptides (BR) 326
Dumoulin, A., *see* Manning, J. M. 211

E

Eddy, S. R., Human Genome Computing, Second Edition (BR) 124
Elefanty, A., Oncogenes and Tumour Suppressors (Frontiers in Molecular Biology, No. 19) (BR) 206
Esposito, M. S., *see* Thomson, G. M17
Etzold, T., *see* Kreil, D. P. 155
Everett, R. D., A surprising role for the proteasome in the regulation of herpesvirus infection 293

F

Farquhar, M. G., *see* Zheng, B. 411
Feizi, T. and Galustian, C., Novel oligosaccharide ligands and ligand-processing pathways for the selectins 369 (*see also* erratum 427)
Fernandez, J. M., *see* Fisher, T. E. 379
Fields, D. S., The yoctomole limit: playground of cells (L) 129
Fimia, G. M., *see* De Cesare, D. 281
Fisher, T. E., Oberhauser, A. F., Carrion-Vazquez, M., Marszalek, P. E. and Fernandez, J. M., The study of protein mechanics with the atomic force microscope 379
Freeland, S. J., *see* Knight, R. D. 241
Fricker, L. D. and Leiter, E. H., Peptides, enzymes and obesity: new insights from a 'dead' enzyme 390
Fujimoto, M., *see* Naka, T. 394

G

Gabdoulline, R. R., Wade, R. C. and Walther, D., MolSurfer: two-dimensional maps for navigating three-dimensional structures of proteins 285
Gaillard, P-H. L., *see* Sgouros, J. 95
Gaitatzes, C., *see* Smith, T. F. 181
Galustian, C., *see* Feizi, T. 369
Geiduschek, E. P. and Haselkorn, R., Professor Samuel D. Weiss, 1926–1997 (O) 45 (*see also* author correction 162)
Gerhold, D., Rushmore, T. and Caskey, C. T., DNA chips: promising toys have become powerful tools 168
Gibson, F., The elusive branch-point compound of aromatic amino acid biosynthesis (R) 36
Gibson, Q. H., *see* Brunori, M. 253
Girault, J-A., Labesse, G., Mornon, J-P. and Callebaut, I., The N-termini of FAK and JAKs contain divergent band 4.1 domains 54
Goebl, M., Bioinformatics: A Practical Guide to the Analysis of Genes and Proteins (BR) 327
Gruissem, W., *see* Hayes, R. 199
Gu, M., *see* Watts, J. D. (L) 228
Guex, N., Diemand, A. and Peitsch, M. C., Protein modelling for all 364
Gupta, R. S., *see* Soltys, B. J. 174
Gupta, R. S., Origin of eukaryotic cells: was metabolic symbiosis based on hydrogen as the driving force? (L) 423
Gutfreund, H., Rapid-flow techniques and their contributions to enzymology (R) 457

H

Haber, J. E., DNA recombination: the replication connection 271
Halliwell, B., Vitamin C: poison, prophylactic or panacea? 255
Hankamer, B., *see* Barber, J. 43
Hannun, Y. A., *see* Kolesnick, R. (L) 224
Hannun, Y. A., *see* Perry, D. K. (L) 226
Haselkorn, R., *see* Geiduschek, E. P. (O) 45
Hayes, R., Kudla, J. and Gruissem, W., Degrading chloroplast mRNA: the role of polyadenylation 199
Hellen, C. U. T., *see* Pestova, T. V. 85
Hemmings, B. A., *see* Millward, T. A. 186
Hilton, D., The Cytokine Handbook (BR) 461
Hofmann, K. and Dixit, V. M., Reply to Kolesnick and Hannun, and Perry and Hannun (L) 227
Horton, P., *see* Nakai, K. 34
Hou, Y-M., Transfer RNAs and pathogenicity islands 295
Hsuan, J. J., Protein Protocols on CD-ROM 35
Hynes, R. O., Cell adhesion: old and new questions M33

J

Jacobson, E. L., *see* Jacobson, M. K. 415
Jacobson, M. K. and Jacobson, E. L., Discovering new ADP-ribose polymer cycles: protecting the genome and more 415
Jeffery, C. J., Moonlighting proteins 8
Johnson, L. N. and Petsko, G. A., David Phillips and the origin of structural enzymology (R) 287
Jokela, M., *see* Mäkiniemi, M. 14
Jones, N., *see* Swanton, C. 116

K

Kamminga, H., Internationalizing biochemistry: the 1949 congress in context (R) 404
Kellershohn, N., *see* Laurent, M. 418
Kelly, R. B., Deconstructing membrane traffic M29
Kemp, B. E., Mitchelhill, K. I., Stapleton, D., Michell, B. J., Chen, Z-P. and Witters, L. A., Dealing with energy demand: the AMP-activated protein kinase 22
Kent, C. and Carman, G. M., Interactions among pathways for phosphatidylcholine metabolism, CTP synthesis and secretion through the Golgi apparatus 146
Kieber, J. J., *see* D'Agostino, I. B. 452
Killmann, H., *see* Braun, V. 104
Kinzler, K. W., *see* Cahill, D. P. M57
Kipeläinen, S., *see* Mäkiniemi, M. 14
Kirschner, M., Intracellular proteolysis M42
Kishimoto, T., *see* Naka, T. 394
Knight, R. D., Freeland, S. J. and Landweber, L. F., Selection, history and chemistry: the three faces of the genetic code 241
Kochendoerfer, G. G., Lin, S. W., Sakmar, T. P. and Mathies, R. A., How color visual pigments are tuned 300
Koehler, C. M., Merchant, S. and Schatz, G., How membrane proteins travel across the mitochondrial intermembrane space 428
Kolesnick, R. and Hannun, Y. A., Ceramide and apoptosis (L) 224
Koonin, E. V., *see* Aravind, L. 342
Koonin, E. V., *see* Aravind, L. 47
Kornberg, R. D., Eukaryotic transcription control M46
Kouzarides, T., *see* Brehm, A. 142
Krebs, J., *see* Carafoli, E. (BR) 325
Kreil, D. P. and Etzold, T., DATABANKS – a catalogue database of molecular biology databases 155
Kressler, D., *see* de la Cruz, J. 192
Kreusch, A., *see* Choe, S. 345
Kropshofer, H., *see* Vogt, A. B. 150
Kudla, J., *see* Hayes, R. 199
Kühn, L. C., Iron overload: molecular clues to its cause 164
Kumar, S. and Colussi, P. A., Prodomains – adaptors – oligomerization: the pursuit of caspase activation in apoptosis 1
Kuriyan, J., *see* Šali, A. M20
Kyrpides, N. C., *see* Tavernarakis, N. 425

L

Labesse, G., *see* Girault, J-A. 54
Landweber, L. F., *see* Knight, R. D. 241
Laurent, M. and Kellershohn, N., Multistability: a major means of differentiation and evolution in biological systems 418
Leder, P., *see* Bedford, M. T. 264
Lee, C-P., *see* Azzone, G. F. (O) 166
Leiter, E. H., *see* Fricker, L. D. 390
Lengauer, C., *see* Cahill, D. P. M57
Lesk, A. M., *see* Whisstock, J. C. 132
Lewitter, F., *see* Pandey, A. 276
Lichten, M., DNA Damage and Repair, Vol. I: DNA Repair in Prokaryotes and Lower Eukaryotes (BR) 84
Lin, S. W., *see* Kochendoerfer, G. G. 300
Linder, P., *see* de la Cruz, J. 192
Livshits, V. A., *see* Aleshin, V. V. 133
López-García, P. and Moreira, D., Metabolic symbiosis at the origin of eukaryotes 88
López-García, P. and Moreira, D., On hydrogen transfer and a chimeric origin of eukaryotes (L) 424

M
Mäkiniemi, M., Pospiech, H., Kipeläinen, S., Jokela, M., Vihinen, M. and Syväoja, J. E., A novel family of DNA-polymerase-associated B subunits 14
Manchester, K. L., New Beer in an Old Bottle (Eduard Buchner and the Growth of Biochemical Knowledge) (BR) 125
Mann, D., *see* Swanton, C. 116
Manning, J. M., Dumoulin, A., Manning, L. R., Chen, W., Padovan, J. C., Chait, B. T. and Popowicz, A., Remote contributions to subunit interactions: lessons from adult and fetal hemoglobins 211
Manning, L. R., *see* Manning, J. M. 211
Marszalek, P. E., *see* Fisher, T. E. 379
Martin, A. B. and Schultz, P. G., Opportunities at the interface of chemistry and biology M24
Mathies, R. A., *see* Kochendoerfer, G. G. 300
May, A. P. and Ponting, C. P., Integrin α- and β4-subunit-domain homologues in cyanobacterial proteins 12
McCormick, F., Signalling networks that cause cancer M53
McDonald, N., *see* Swanton, C. 116
Merchant, S., *see* Koehler, C. M. 428
Messenguy, F., Yeast Gene Analysis (Methods in Microbiology Vol. 26) (BR) 161
Meyerowitz, E. M., Plants, animals and the logic of development M65
Michell, B. J., *see* Kemp, B. E. 22
Millward, T. A., Zolnierowicz, S. and Hemmings, B. A., Regulation of protein kinase cascades by protein phosphatase 2A 186
Mitchelhill, K. I., *see* Kemp, B. E. 22
Monsigny, M., Applied Antisense Oligonucleotide Technology (BR) 367
Moras, D., *see* Dantonel, J-C. 335
Moreira, D. and Philippe, H., Smr: a bacterial and eukaryotic homologue of the C-terminal region of the MutS2 family 298
Moreira, D., *see* López-García, P. (L) 424
Moreira, D., *see* López-García, P. 88
Morett, E. and Bork, P., A novel transactivation domain in parkin 229
Mornon, J-P., *see* Girault, J-A. 54
Morrical, S. W., *see* Beernink, H. T. H. 385
Morris, E. P., *see* Barber, J. 43
Müller-Hill, B., I Wish I'd Made You Angry Earlier. Essays on Science, Scientists and Humanity (BR) 124
Murphy, D. J. and Vance, J., Mechanisms of lipid-body formation 109

N
Naka, T., Fujimoto, M. and Kishimoto, T., Negative regulation of cytokine signaling; STAT-induced STAT inhibitor 394
Nakai, K. and Horton, P., PSORT: a program for detecting sorting signals in proteins and predicting their subcellular localization 34
Nasmyth, K., Separating sister chromatids 98
Neer, E. J., *see* Smith, T. F. 181
Neuhaus, H. E., *see* Winkler, H. H. 64
Nield, J., *see* Barber, J. 43
Nilges, M., *see* Blomberg, N. 441

O
Oberhauser, A. F., *see* Fisher, T. E. 379
Ohnuma, S-i., *see* Wang, K. 445
Ouzounis, C. A., *see* Blencowe, B. J. 179

P
Pääbo, S., Human evolution M13
Padovan, J. C., *see* Manning, J. M. 211
Pagano, M., Ubiquitin and the Biology of the Cell (BR) 40
Pandey, A. and Lewitter, F., Nucleotide sequence databases: a gold mine for biologists 276
Patel, N. H., *see* Davis, G. K. M68
Patterson, S. D., *see* Watts, J. D. (L) 228
Peitsch, M. C., *see* Guex, N. 364
Perler, F. B., A natural example of protein trans-splicing 209
Perry, D. K. and Hannun, Y. A., The use of diglyceride kinase for quantifying ceramide (L) 226
Perutz, M. F., Glutamine repeats and neurodegenerative diseases: molecular aspects 58
Pestova, T. V. and Hellen, C. U. T., Ribosome recruitment and scanning: what's new? 85
Petsko, G. A., *see* Johnson, L. N. (R) 287
Pfaffinger, P., *see* Choe, S. 345
Philippe, H., *see* Moreira, D. 298
Plemper, R. K. and Wolf, D. H., Retrograde protein translocation: ERADication of secretory proteins in health and disease 266
Poch, O., *see* Dantonel, J-C. 335
Polverino, A. J., *see* Watts, J. D. (L) 228
Ponting, C. P. and Aravind, L., START: a lipid-binding domain in StAR, HD-ZIP and signalling proteins 130 (*see also* author correction 191)
Ponting, C. P., *see* May, A. P. 12
Ponting, C. P., Bork, P., Schultz, J. and Aravind, L., No Sec7-homology domain in guanine-nucleotide-exchange factors that act on Ras and Rho (L) 177
Popowicz, A., *see* Manning, J. M. 211
Pospiech, H., *see* Makiniemi, M. 14

Q
Quinn, G. B., Taylor, A., Wang, H-p. and Bourne, P. E., Development of Internet-based multimedia applications 321

R
Rapley, R., Practical Skills in Biomolecular Sciences (BR) 39
Redfield, R., Evolutionary Genetics, Second Edn (BR) 252
Rice-Evans, C., Free Radical and Antioxidant Protocols (Methods in Molecular Biology Vol. 108) (BR) 161
Riechmann, L., The Immunoglobulins. Structure and Function (BR) 290
Rippe, K., The Physical Basis of Biochemistry (BR) 290
Robinson, C., *see* Dalbey, R. E. 17
Rose, G. D., *see* Baldwin, R. L. 26
Rose, G. D., *see* Baldwin, R. L. 77
Rushmore, T., *see* Gerhold, D. 168

S
Sakmar, T. P., *see* Kochendoerfer, G. G. 300
Salamon, Z., Brown, M. F. and Tollin, G., Plasmon resonance spectroscopy: probing molecular interactions within membranes 213
Šali, A. and Kuriyan, J., Challenges at the frontiers of structural biology M20
Saraste, M., *see* Blomberg, N. 441
Saraste, M., Structure and Mechanism in Protein Science: A Guide to Enzyme Catalysis and Protein Folding (BR) 461
Sassone-Corsi, P., *see* De Cesare, D. 281
Savino, C., *see* Brunori, M. 253
Saxena, K., *see* Smith, T. F. 181
Schatz, G., *see* Koehler, C. M. 428
Schimmel, P. and Wang, C-C., Getting tRNA synthetases into the nucleus 127
Schimmel, P., The RNA World, Second Edition (BR) 408
Schultz, J., *see* Ponting, C. P. (L) 177
Schultz, P. G., *see* Martin, A. B. M24
Schwarz, E. and Benzer, S., The recently reported NIβ is already known as Calx-β motif (L) 260
Sedgwick, S. G. and Smerdon, S. J., The ankyrin repeat: a diversity of interactions on a common structural framework 311
Semb, H., *see* Christofori, G. 73
Semenza, G. L., *see* Dang, C. V. 68
Sgouros, J., Gaillard, P-H. L. and Wood, R. D., A relationship between a DNA-repair/recombination nuclease family and archaeal helicases 95
Shulman, J. M. and St Johnston, D., Pattern formation in single cells M60
Siderovski, D. P., Diversé-Pierluissi, M. A. and De Vries, L., The GoLoco motif: a $G\alpha_{i/o}$ binding motif and potential guanine-nucleotide-exchange factor 340
Smerdon, S. J., *see* Sedgwick, S. G. 311
Smith, T. F., Gaitatzes, C., Saxena, K. and Neer, E. J., The WD repeat: a common architecture for diverse functions 181
Snel, B., *see* Bork, P. 261
Soderling, T. R., The Ca^{2+}–calmodulin-dependent protein kinase cascade 232
Soltys, B. J. and Gupta, R. S., Mitochondrial-matrix proteins at unexpected locations: are they exported? 174
Song, Z. and Steller, H., Death by design: mechanism and control of apoptosis M49
Splittgerber, U., *see* Crews, C. M. 317
Springer, T. A., *see* Bork, P. 261
St Johnston, D., *see* Shulman, J. M. M60
Stapleton, D., *see* Kemp, B. E. 22
Steller, H., *see* Song, Z. M49
Stocker, R., The ambivalence of vitamin E in atherogenesis 219
Svitkina, T. M. and Borisy, G. G., Progress in protrusion: the tell-tale scar 432

Swanton, C., Card, G. L., Mann, D., McDonald, N. and Jones, N., Overcoming inhibitions: subversion of CKI function by viral cyclins 116
Syväoja, J. E., *see* Mäkiniemi, M. 14

T

Tame, J. R. H., What is the true structure of liganded haemoglobin? 372
Tavernarakis, N., Driscoll, M. and Kyrpides, N. C., The SPFH domain: a universal motif implicated in regulating targeted protein turnover in stomatins and other membrane-associated proteins 425
Taylor, A., *see* Quinn, G. B. 321
Thomson, G. and Esposito, M. S., The genetics of complex diseases M17
Tollin, G., *see* Salamon, Z. 213
Tomkinson, B., Tripeptidyl peptidases: enzymes that count 355
Tora, L., *see* Dantonel, J-C. 335
Travaglini-Allocatelli, C., *see* Brunori, M. 253
Travers, A., The location of the linker histone on the nucleosome 4
Turner, J. and Crossley, M., Mammalian Krüppel-like transcription factors: more than just a pretty finger 236

U

Unrau, P. J., *see* Bartel, D. P. M9

V

Vale, R. D., Millennial musings on molecular motors M38
Vallone, B., *see* Brunori, M. 253
Vance, J., *see* Murphy, D. J. 109
Vihinen, M., *see* Makiniemi, M. 14
Vogelstein, B., *see* Cahill, D. P. M57
Vogt, A. B. and Kropshofer, H., HLA-DM – an endosomal and lysosomal chaperone for the immune system 150

W

Wade, R. C., *see* Gabdoulline, R. R. 285
Walther, D., *see* Gabdoulline, R. R. 285
Wang, C-C., *see* Schimmel, P. 127
Wang, H-p., *see* Quinn, G. B. 321
Wang, K. and Ohnuma, S-i., Chain-length determination mechanism of isoprenyl diphosphate synthases and implications for molecular evolution 445
Warner, J. R., The economics of ribosome biosynthesis in yeast 437
Watts, J. D., Aebersold, R., Polverino, A. J., Patterson, S. D. and Gu, M., Ceramide second messengers and ceramide assays (L) 228
Weisblum, B., Back to camelot: defining the specific role of tRNA in protein synthesis (R) 247
Welch, G. R., Paul A. Srere (O) 377
Whisstock, J. C. and Lesk, A. M., SH3 domains in prokaryotes 132
Williams, J. G., Serpentine receptors and STAT activation: more than one way to twin a STAT 333
Winkler, H. H. and Neuhaus, H. E., Non-mitochondrial ATP transport 64
Witkowski, J., A history of Molecular Biology (BR) 462
Witters, L. A., *see* Kemp, B. E. 22
Wolf, D. H., *see* Plemper, R. K. 266
Wood, E., Fundamentals of Biochemistry (BR) 409
Wood, R. D., *see* Sgouros, J. 95
Woolfson, D., Protein Analysis and Design (BR) 463
Wurtz, J-M., *see* Dantonel, J-C. 335

Z

Zakataeva, N. P., *see* Aleshin, V. V. 133
Zheng, B., De Vries, L. and Farquhar, M. G., Divergence of RGS proteins: evidence for the existence of six mammalian RGS subfamilies 411
Zimm, B. H., One chromosome: one DNA molecule (R) 121
Zolnierowicz, S., *see* Millward, T. A. 186

SUBJECT INDEX

Compiled by Mary Purton

Abbreviations: CC, Computer Corner; L, Letter to the Editor, O, Obituary, PSM, Protein Sequence Motifs; R, Reflections; T, Techniques.
M page numbers refer to the December Millennium issue.

A

aconitase 9
ACT (activator of CREM in testis) 284
ActA 433
actin cytoskeleton
  cell adhesion M33
  cell polarity M61
  dynamics 432
  p21-activated kinases (PAKs) 350
activating transcription factor 1 (ATF-1) 281
activators M46
adaptor molecules
  caspase activation 1, 47
  translation initiation 398
adenomatous polyposis coli (APC) pathway 75, M54, M57
adipocytes 111
adipose differentiation-related protein 111
ADP-ribose (ADPR) polymers 415
ADSI (analytically defined surfaces interface-mapping) (CC) 285
allostery 158 (R), 372
alternative splicing, detection 277
amino acids
  biosynthesis (R) 36
  efflux proteins (PSM) 133
  mischarging of tRNAS (R) 248
  unnatural M25
AMP-activated protein kinase 22
cAMP-responsive element transcription factor (CREB) 232, 281
cAMP-responsive transcription factor binding protein (CBP) 282, M46
amyloid diseases 58, 329
anaphase-promoting complex (APC) 98
androgen receptors, glutamine repeats 60
angiogenesis and tumor development 68
angiotensin II 333
ankyrin repeat 311
antigen presentation, role of HLA-DM 150
antioxidants
  vitamin C 255
  vitamin E 219
Apaf-1 2, M50
  see also apoptotic (Ap)-ATPases
apolipoprotein B 110
apomyoglobin, protein folding 77
apoptosis M49
  and cancer 71, M54
  caspase activation 1
  and ceramide 224 (L), 226 (L), 227 (L), 228 (L)
  protein domains 47
  regulation by Ca^{2+}–calmodulin-dependent protein kinase 235
apoptotic (Ap)-ATPases 50, 53
  see also Apaf-1
Arabidopsis thaliana M65
  plant response regulators 452
archaea
  evolution 88, M5
  helicases (PSM) 95
ARNO 307
Arp2/3 complex 432
ascorbate 255
aspartate aminotransferase 174
aspartate receptor, multiple functions 9
association gene mapping M17
AT_1 receptor 333
ataxin 1, glutamine repeats 60
atherogenesis 219
atomic force microscopy 379
ATP transport, bacterial and plant 64
ATP-binding cassette (ABC) transporters, bacterial iron transport 105

B

bacterial toxins, retrograde protein translocation 269
band 4.1 domain (PSM) 54
barnase, protein folding 80
Bcl-2 family 50, 71, M50
biochemistry, internationalizing (R) 404
biofilms M2
biotin carboxyl carrier protein 362
biotin protein ligase 359
  multiple functions 10
biotinylation 359
BIR (baculovirus IAP repeat) motif 50, M51
BirA 359
Brefeldin A 310
Btk 442
Bub proteins 101
butyrophilin 113

C

cadherins M34
  E-cadherin 73
Caenorhabditis elegans M65
Ca^{2+}–calmodulin-dependent protein kinase 188, 232
calnexin 151
Calx-β motif 12 (PSM), 260 (L)
cancer
  and apoptosis 71, M54
  genetic instability M57
  and metabolic changes 68
  signaling networks M53
  vitamin C 255
candidate gene mapping M17
capsaicin 319
carbinolamine dehydratase, multiple functions 9
carboxypeptidase D 391
carboxypeptidase E 390
CARD (caspase activation and recruitment) domain 1, 48
CART (cysteine-rich motif associated with RING) domain 49
caspases 1, 49, M50
catalytic antibodies M26
catenins 73
  β-catenin M54, M57
CDC20 98
CDC25 307
Cdc42 350, 433, M61
CDP-choline pathway 146
cell adhesion M33
  and tumor development 73
  selectin oligosaccharide ligands 369, 427
cell cycle regulation
  adenomatous polyposis coli (APC) pathway M54
  and apoptosis 51
  and chromatid separation 98
  protein degradation M42
  protein phosphatase 2A 189
  viral cyclins 116
cell polarity M60
cellular microbiology M3
ceramide and apoptosis 224 (L), 226 (L), 227 (L), 228 (L)
chemical biology 317, M24
chemical genetics 317
chemical synthesis of selectin ligands 369, 427
chloroplasts
  ATP transport 64
  degradation of mRNA 199
  evolution 66
  origin of eukaryotes 88, 423 (L), 424 (L)
  protein translocation 17
chorismic acid (R) 36
chromatid separation 98
chromatin remodelling M47
  by retinoblastoma protein 142, 318
chromatosomes 4
chromosomal instability M57
chromosome, length of DNA molecules (R) 121
chymotrypsin inhibitor 2 58, 80
citrate-mediated iron transport 107
class-II-associated Ii peptide (CLIP) 151
cohesin 98
color visual pigments, spectral tuning 300

comparative genomics M5
Arabidopsis and *Caenorhabditis elegans* M65
origin of eukaryotes 91
coupled plasmon-waveguide resonance spectroscopy (T) 213
CPN10 174
CPN160 174
creatine kinase 24
CTP synthesis 146
Cut2p 98
K-cyclin 116
cyclin D1 M54
cyclin-dependent kinase inhibitors 116
cyclin-dependent kinases 189
cystic fibrosis transmembrane conductance regulator
multiple functions 10
retrograde protein translocation 269
cytochrome *c* M50
cytochrome P450 genes, analysis (T) 170
cytochrome-b_6f, plasmon resonance spectroscopy (T) 217
cytokine signaling, inhibition 394
cytokine-inducible SH2 protein (CIS) 395
cytokinin signaling 453

D

DATABANKS (CC) 155
DEAD-box RNA helicases 192
deafness-dystonia peptide (DDP) 431
death domain 1, 48
death effector domain 1, 48
death receptors M50
development
Arabidopsis thaliana *M65*
Caenorhabditis elegans M65
segmentation M68
DH (Dbl homology) domain and PH domain 307, 444
diaphorase, multistability 421
Dictyostelium STATs 333
diglyceride kinase assay 226 (L), 228 (L)
DNA
chips (T) 168
length measurements (R) 121
microarrays (T) 168
oxidative damage 257
polymorphisms 169 (T), 279, M18
recombination 271, 385, 297
repair 271, 298 (PSM), M57
replication and recombination 271, 385
DNA polymerase-associated B subunits (PSM) 14
dnaE gene 209
DtxR 107
dynein M38

E

E2F 142
elasticity of mechanical proteins 379
endocytosis M31
endoplasmic reticulum
ATP transport 64
ER-associated protein degradation 266
lipid body formation 109
mitochondria association 176
enhancers M46
enzymology, rapid-flow techniques (R) 452
ERK 188
Ernster, Lars (O) 166
ethylene signaling 452
eubacteria M5, 88
eukaryotes, origin 88, 423 (L), 424 (L), M5
eukaryotic initiation factor eIF2 401
eukaryotic initiation factor eIF4G 398
EVH1 [Enabled/vasodilator-stimulated phosphoprotein (VASP) homology] domain 441
evolution
genetic code origins 243
human M13
inteins 209
isoprenoid synthesis 445
origin of eukaryotes 88, 423 (L), 424 (L), M5
phylogenetic trees or nets? M5
RNA world 243, M9
segmentation M68
extracellular matrix, cell adhesion M33

F

F box domain 184
F_1 ATPase M40
FADD 1
farnesyl diphosphate synthase 446
Fas M50
fat mutation 390
fatty acid oxidation, regulation 24
ferricytochrome *c*, protein folding 77
FF domain (PSM) 264
Ffh 18
FhuA 105
fibronectin type III fold 379
filopodia 432
Fizzy
see also CDC20
flotillins (PSM) 425
focal-adhesion kinase (FAK), band 4.1 domain (PSM) 54
FtsY 18
fumarase 174
functional cloning M17
Fur 107

G

G proteins
$G\alpha_{i/o}$-Loco (GoLoco) motif (PSM) 340
as molecular motors M40
nucleotide exchange 309
RGS proteins 340, 411
WD repeats in β subunit 181
G-patch (PSM) 342
GA-binding protein β 312
GCN2 402
geldanamycin 139
gene expression analysis 169 (T), 278
gene identification, automated 278
gene silencing M48
genetic code
expansion M25
origins 241
genetic disease, multifactorial M17
geranylgeranyl diphosphate synthase 446
glucose metabolism 24, 68
glutamine repeats and neurodegenerative diseases 58
glyceraldehyde-3-phosphate dehydrogenase, multiple functions 9
glycogen synthase kinase 3 75, M54
glycolysis and cancer 68
GoLoco motif (PSM) 340
grim M51
Grp94
see also Hsp90
GTPase-activating proteins, RGS proteins 411
guanine-nucleotide exchange factors (GEFs) 306
guanine-nucleotide-releasing protein (GNRP) domains (L) 177

H

haemoglobin *see* hemoglobin
head involution M51
helicases, archaeal (PSM) 95
heme-regulated inhibitor of translation (HRI) 137, 402
hemochromatosis 164
hemoglobin 158 (R)
R2 structure 372
subunit interactions 211
herpes viruses
cell cycle deregulation 116
proteolysis and lytic infection 293
HFE 164
HflK/C (PSM) 425
Hip 138
histones 4, M46
acetylation M47
deacetylation and retinoblastoma protein 142, 318
HLA-DM 150
holocarboxylase synthetase *see* biotin protein ligase
homing endonuclease, inteins 209
homologous recombination 271, 386
Hop 138
horizontal gene transfer 295, M5
HSP60 174
Hsp70 138, 174
Hsp90 136
huntingtin 58
hydrogen hypothesis, origin of eukaryotes 88, 423 (L), 424 (L)
8-hydroxy-2′-deoxyguanosine 257
3-hydroxy-3-methylglutaryl (HMG)-CoA reductase 24
3-hydroxy-3-methylglutaryl (HMG)-CoA synthase 174
hypoxia and tumor development 68

I

IBR (in between ring finger) domain (PSM) 229
ICP0 *see* Vmw110
IκB 312
immunoglobulin superfamily M34
immunoglobulin-type fold 379
immunophilins 138
inhibitor of apoptosis proteins (IAPs) 50, M51
INK family of cyclin-dependent kinase (CDK) inhibitors 116, 312
integrins 261 (PSM), M34, M36
and cyanobacterial proteins 12 (PSM), 260 (L)
inteins 209

International Union of Biochemistry and Molecular Biology, origins (R) 404
Internet resources
DATABANKS (CC) 155
Internet-based multimedia applications (CC) 321
MolSurfer (CC) 285
PSORT (CC) 34
SWISS-MODEL (CC) 364
Swiss-PdbViewer (CC) 364
invariant chain (Ii) 151
ion selectivity, voltage-gated potassium channels 346
iron transport
bacterial 104
intestinal iron absorption 164
iron-regulatory proteins 164
iron-responsive elements 164
isocitrate hydrogenase, multistability 421
isoprenoid synthesis, chain-length determination 445
isoprenyl diphosphate synthases 445

J

Janus kinase binding protein (JAB) 394
Janus tyrosine kinases (JAKs) 394, M46
band 4.1 domain (PSM) 54

K

KcsA 345
kinesin M38
Kip/Cip family of cyclin-dependent kinase (CDK) inhibitors 118
Krüppel-like transcription factors 236

L

Laboratory of Molecular Biology, Cambridge, UK (R) 205
lac repressor, sliding M39
α-lactalbumin, protein folding 78
β-lactoglobulin, protein folding 82
lactose operon, multistability 418
lamellipodia 432
Las17p/Bee1p *see* Wiskott–Aldrich syndrome protein (WASP) family
leptomycin 318
leukocytes, selectin-mediated cell interactions 369, 427
Lewis^x antigens 369, 427
light-harvesting chlorophyll *a*–*b* complex, subunit positioning 43
LIM kinase 353
linkage gene analysis M17
lipid bodies, formation 109
lipid peroxidation 220
lipid-binding domains (PSM) 130
low-density lipoprotein and atherogenesis 219
lysosome
HLA-DM molecular chaperone 150
proteolysis 355
lysozyme (R) 287

M

Mad proteins 101
major histocompatibility complex class II, role of HLA-DM in antigen presentation 150
MAP kinase kinase (MEK) 188
mass spectrometry 228 (L), 276
MATH (meprin and TRAF-homology) domain 49
MDM2 M54
Mediator M47
membrane fusion M30
membrane proteins
ER-associated degradation 266
plasmon resonance spectroscopy (T) 213
membrane traffic M29
membrane transport, bacterial iron transport 105
messenger RNA
attachment of ribosomes 85
degradation 199
metabolic symbiosis 85, 423 (L), 424 (L)
microbiology M1
microsatellite instability M57
microtubules 421, M62
mitochondria
ATP transport 64
ER association 176
evolution 66
export of matrix proteins 174
genome M13
origin 88, 423 (L), 424 (L)
protein translocation across intermembrane space 428
molecular chaperones
HLA-DM 150
Hsp90 136
molecular dynamics, myoglobin oxygen binding 253
molecular motors M38
MolSurfer (CC) 285
Monod–Wyman–Changeux model 158 (R), 372
Mtt pathway *see* twin-arginine translocation (TAT) pathway
multimedia applications (CC) 321
multistability 418
MutS2 family (PSM) 298
Myc 70, M54
myoglobin, oxygen binding 253
myosin M38
myosin kinases 352
myotrophin 312

N

ND10, degradation 293
neurodegenerative diseases, glutamine repeats 58
neuroendocrine peptide processing 391
neuropilin, multiple functions 8
NIβ (NCX, Integrin β4) domain *see* Calx-β motif
nuclear transport 127, 318
nucleosomes 4, M23, M46
nucleotide sequence databases 276

O

obesity 390
okadaic acid 186
oleosins 109
oligosaccharide ligands for selectins 369, 427
opsin 300
oxygen binding, molecular dynamics 253

P

P-glycoprotein transmembrane transporter, multiple functions 10
p21-activated kinases (PAKs) 350
p23 138
p300 282, M46
P32 174
p53 69
p70 S6 kinase 187
pain receptors 318
pair-rule genes M68
parkin (PSM) 229
pathogenicity islands 295, M1
Pds1p 98
PDZ domain M63
Pelle kinases 50
perilipins 111
PERK 402
PH (pleckstrin homology) domains 441
ΔpH thylakoid protein translocation pathway 19
PhD oversupply? M73
Phillips, David (R) 287
phosphatase and tensin homologue deleted from chromosome 10 (PTEN) M54
phosphatidylcholine metabolism 146
phosphatidylethanolamine-methylation pathway 146
phosphatidylinositol lipid binding, PH domains 441
phosphoglucose isomerase, multiple functions 8
phosphoinositide 3-kinases M53
phospholipase D 148
phosphorelay signal transduction 452
phosphosugar isomerization, SIS domain (PSM) 94
photomorphogenesis, mRNA degradation 199
photosystem II, subunit positioning 43
PIX (Pak interacting exchange factor) 352
PKR 402
plants
ATP transport 64
comparison of *Arabidopsis* and *Caenorhabditis elegans* M65
lipid body formation 109
response regulators 452
plasmon resonance spectroscopy (T) 213
plastids, lipid body formation 110
plexins (PSM) 261
poly(ADP-ribose) polymerases (PARPs) 415
poly(ADP-ribose) glycohydrolase (PARG) 415
polyA-binding protein, translation initiation 400
polyadenylation and mRNA degradation 199
positional cloning 279, M17
potassium channels, voltage-gated 345
prenyltransferases 445
prions 270, 329, 421
programmed cell death *see* apoptosis
prohibitins (PSM) 425
prolyl oligopeptidase 358
promyelocytic leukemia (PML) nuclear bodies 293
proteasome 266, 357, M42
protein degradation 266, 293, 357, M42

protein folding
force-induced unfolding and refolding 383
hierarchy 26, 77, 185
misfolding and amyloid deposits 329
protein kinase A pathway 436
protein kinase B 187, 442, M54
protein kinase C, inhibition 187
protein kinase cascades
Ca^{2+}–calmodulin-dependent protein kinase 232
inhibitors 319, M28
regulation by protein phosphatase 2A 186
protein kinases and Hsp90 137
protein mechanics, unfolding mechanical proteins 379
protein modeling 364 (CC), M21
protein phosphatase 2A 186
protein secretion
and cell polarity M62
and phosphatidylcholine metabolism 148
and ribosome synthesis 438
protein sequencing (R) 203
protein sorting 266, M31
protein sorting signals (CC) 34
protein structure M20
ankyrin repeat 311
biotin protein ligase 360
guanine-nucleotide-exchange factors (GEFs) 306
ligand-bound haemoglobin 372
long-range subunit interactions 211
voltage-gated potassium channels 345
WD repeats 183
see also individual motifs and domains
protein synthesis *see* translation
protein *trans*-splicing 209
protein translocation 17
folded proteins 19
mitochondria 174, 428
retrograde 266
Sec pathway 17
proteins, multifunctional 8, 174
PSI (plexins, semaphorins and integrins) domain (PSM) 261
PSORT (CC) 34
PTB (phosphotyrosine binding) domain 441
PutA protein, multiple functions 8
PWI motif (PSM) 179

R

Rac 350, 433, M61
Rad51 271
Rad52 271, 386
Rad54 274
Rad55 274, 386
Rad57 274, 386
radicicol 139
Raf M53
RAIDD 1
RalGDS proteins M53
Raman spectroscopy 302
Ran-binding domain 441
Raney-nickel experiment (R) 247
Rap1 439
rapid-flow techniques (R) 452
Ras
GEFs 306
oncogenic signaling M53
RBCK1 (PSM) 230
RCC1 307
reactive oxygen species and disease 256
reaper M51
RecO 387
recombination/replication mediator proteins (RMPs) 385
RecR 387
regulator of G-protein signaling (RGS) proteins 340 (PSM), 411
response regulators, plants 452
11-*cis*-retinal 300
retinoblastoma protein
and histone deacetylation 142, 318
checkpoint M54
Rho M61
Rho GTPases 432, M61
FF domain (PSM) 264
regulation by p21-activated kinases (PAKs) 350
regulation of E-cadherin 74
rhodopsin
plasmon resonance spectroscopy (T) 217
tuning of color visual pigments 300
RhtB (PSM) 134
ribosome
biogenesis 196, 437
structure M23
translation initiation 85, 398
ribozymes M10
RNA
degradation 197, 199
export 197
helicases 192
processing 197
splicing 179 (PSM), 196, 264 (PSM)
world 243, M9
RNA polymerase II M48
RNA-interacting modules, G-patch (PSM) 343
RNase H, protein folding 77

S

Sanger, Fred (R) 203
Scar (suppressor of cAMP receptor) *see also* Wiskott–Aldrich syndrome protein (WASP) family
Sec14p 148
Sec7 domain 177 (L), 307, 444
segment polarity genes M68
selectins 369, 427, M34
semaphorins (PSM) 261
separin 98
seven-transmembrane-spanning-domain receptors, STAT signalling 333
SH3 domains in prokaryotes (PSM) 132
Shaker 346
Shaw 346
siderophores 104
signal recognition particle 18
signal transducer and activator of transcription (STAT) 333, 394, M46
silent information regulator (SIR) proteins M48
single nucleotide polymorphisms M18, 279
single-stranded DNA binding proteins (SSBs) 385
SIS (sugar isomerase) domain (PSM) 94
SMC (structural maintenance of chromosomes) proteins 99
smr (small mutS related) (PSM) 298
SNARE proteins M30
Snf1p 22
Sos 307, 444
SP1 236
spectrin 380
SPFH (stomatins, prohibitins, flotillins and HflK/C) domain (PSM) 425
sphingomyelinase 224 (L), 227 (L)
SR family (PSM) 179
Src kinase, structure M20
Srere, Paul A. (O) 377
START [steroidogenic acute regulatory protein (StAR)-related lipid transfer] domain (PSM) 130
STAT-induced STAT inhibitor-1 (SSI-1) 394
steroid-hormone receptors and Hsp90 136
stomatin (PSM) 425
stop-codon suppression methodology 247 (R), M25
structural genomics M20
subcellular localization prediction (CC) 34
suppressor of cytokine signaling 1 (SOCS-1) 394
suppressor tRNAs 247 (R), M25
surface plasmon resonance (T) 213
Swi6 312
SWISS-MODEL (CC) 364
Swiss-PdbViewer (CC) 364
syntrophy hypothesis, origin of eukaryotes 88, 423 (L), 424 (L)

T

tankyrase 416
TATA-binding protein (TBP)-like factors (TLFs) 333
telomeres, loop structure 416
tendamistat, protein folding 82
thimet oligopeptidase 358
thioredoxin, multiple functions 9
thrombin, multiple functions 10
thylakoid membrane, protein translocation 17
thymidylate synthase, multiple functions 10
TIR (Toll–interleukin-receptor) domain 49
titin, unfolding 380
α-tocopherol 219
tocopherol-mediated peroxidation model 220
Ton system, energy transfer 105
TOR (target of rapamycin) phosphorylation pathway 437
transcription regulation
CREB and CREM 281
eukaryotic M46
retinoblastoma protein 142
TATA-binding protein (TBP)-like factors (TLFs) 333
Krüppel-like transcription factors 236
transfer RNA 247 (R)
horizontal gene transfer 295

transfer RNA synthetases 127, 243
transferrin receptor 164
transglutaminase 60
translation
  initiation 85, 398
  role of RNA helicases 197
  role of tRNA (R) 247
translocase of (mitochondrial) inner membrane (TIM) proteins 428
tricorn protease 355
trinucleotide repeat expansions 58
tripeptidyl peptidases 355
tumor suppression 73, 142
tumor-necrosis factor receptor M50
tumorigenesis
  and cell adhesion 73
  and metabolic changes 68
  genetic instability M57
  signaling networks M53
twin arginine translocator (TAT) pathway 19, 175
two-component signal transduction, plants 452

U
ubiquitin M42
undecaprenyl diphosphate synthase 447
uvsY 385

V
vanilloid receptor 1 319
vascular endothelial growth factor 68
vasodilator-stimulated phosphoprotein (VASP) 434
very low-density lipoproteins 110
vesicle formation M30
viruses
  retrograde protein translocation 269
  see also herpes viruses
vitamin C 255
vitamin E 219
Vmw110 293
voltage-gated potassium channels 345

W
N-WASP
  see also Wiskott–Aldrich syndrome protein (WASP) famil
WAVE (WASP-family verprolin-homologous)
  see also Wiskott–Aldrich syndrome protein (WASP) family
WD repeats 181
Weiss, Samuel B. (O) 45
WH1 [Enabled/vasodilator-stimulated phosphoprotein (VASP) homology] domain 441
Wilson protein 269
Wiskott–Aldrich syndrome protein (WASP) family 433
Wnt signaling 75, M36, M54
worm-like chain model of elasticity 379
WW domain (PSM) 264
Wyman, Jeffries (R) 158

X
X-ray crystallography, distortions 372
xanthine oxidase 113
XPF–ERCC1 DNases (PSM) 95

Y
Yoctomole limit 129 (L)

INDEX OF BOOKS REVIEWED

A

Angeletti, R. H., ed., Protein Analysis and Design 463

Armstrong, D., ed., Free Radical and Antioxidant Protocols (Methods in Molecular Biology, Vol. 108) 161

B

Barrett, G. C. and Elmore, D. T., Amino Acids and Peptides 326

Baxevanis, A. D. and Ouellette, B. F. F., eds, Bioinformatics: A Practical Guide to the Analysis of Genes and Proteins 327

Bergethon, P. R., The Physical Basis of Biochemistry 290

Bishop, M. J., ed., Human Genome Computing, Second Edition 124

Brown, A. J. P. and Tuite, M. F., eds, Yeast Gene Analysis (Methods in Microbiology, Vol. 26) 161

C

Chalfie, M. and Kain, S., eds, Green Fluorescent Protein: Properties, Applications and Protocols 251

Cornish-Bowden, A., ed., New Beer in an Old Bottle (Eduard Buchner and the Growth of Biochemical Knowledge) 125

Cotterill, S., ed., Eukaryotic DNA Replication: A Practical Approach 410

F

Fersht, A., ed., Structure and Mechanism in Protein Science: A Guide to Enzyme Catalysis and Protein Folding 461

G

Gesteland, R. F., Cech, T. R. and Atkins, J. F., eds, The RNA World, Second Edition 408

L

Lynch, K. R., ed., Identification and Expression of G Protein-Coupled Receptors 162

M

Mann, J. and Crabbe, M. J. C., Bacteria and Antibacterial Agents 39

Margulis, L. and Schwartz, K. V., Five Kingdoms: An Illustrated Guide to the Phyla of Life on Earth (3rd edn) 325

Maynard Smith, J., Evolutionary Genetics, Second Edn 252

Morange, M., A History of Molecular Biology 462

N

Nezlin, R., The Immunoglobulins. Structure and Function 290

Nickoloff, J. A. and Hoekstra, M. F., eds, DNA Damage and Repair, Vol. I: DNA Repair in Prokaryotes and Lower Eukaryotes 84

P

Perutz, M. F., ed., I Wish I'd Made You Angry Earlier. Essays on Science, Scientists and Humanity 124

Peters, G. and Vousden, K. H., eds, Oncogenes and Tumour Suppressors (Frontiers in Molecular Biology, No. 19) 206

Peters, J-M., Harris J. R. and Finley, D., eds, Ubiquitin and the Biology of the Cell 40

R

Reed, R., Holmes, D., Weyers, J. and Jones, A., Practical Skills in Biomolecular Sciences 39

Robbins-Roth, C., ed., Alternative Careers in Science: Leaving the Ivory Tower 41

S

Salzberg, S. L., Searls, D. B. and Kasif, S., eds, Computational Methods in Molecular Biology (New Comprehensive Biochemistry, Vol. 32) 463

Stein, C. A. and Krieg, A. M., eds, Applied Antisense Oligonucleotide Technology 367

T

Thomson, A. W., ed., The Cytokine Handbook (3rd edn) 461

V

Van Eldik, L. J. and Watterson, D. M., Calmodulin and Signal Transduction 325

Voet, D., Voet, J. G. and Pratt, C. W., Fundamentals of Biochemistry 409

W

Woolfson, D., Protein Analysis and Design 409

endeavour

take your bearings...

...on the history of science

Endeavour: a quarterly magazine devoted to the history and philosophy of science

Editorial Board

Garland Allen
Washington University, USA

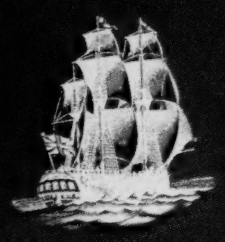
William Brock
University of Kent, UK

Peter Galison
Harvard University, USA

Mary Jo Nye
Oregon State University, USA

Emma Spary
Max-Planck, Berlin, Germany

Liba Taub
Whipple Museum, Cambridge, UK



15% discount on a new personal subscription to Endeavour

Endeavour will now cost you £42.50/$69.70

To subscribe to or request a sample copy of Endeavour contact:

Current Trends Subscriptions
PO Box 331
Haywards Heath
Great Britain
RH16 3FG

ct.subs@rbi.co.uk

CURRENT TRENDS

When ordering please quote code END11C